IN THE CLAIMS

The claims are amended as follows:

1.   (currently amended)   A method of operating a system having a coil, said method comprising:

providing a switched amplified current to the coil from a switched amplifier via a first inductor; and

providing a second current to the coil via a second inductor, wherein the first inductor is coupled to the second inductor via a transformer and the switched amplified current and the second current are substantially out of phase and wherein the switched amplified current and the second current are obtained from the switched amplifier.

~~providing a switched amplified current to the coil; and~~

~~adding a second current to the switched amplified current, wherein the second current is substantially out of phase with the switched amplified current such that the coil receives current with substantially no switching frequency ripple.~~

2.   (cancelled)

3.   (cancelled)

4.   (currently amended)   A method in accordance with Claim 1[3] further comprising coupling the first inductor with the second inductor via a transformer wherein the second inductor is connected to a first end of a secondary side of the transformer and a first side of a capacitor is connected to a second end of the secondary side.

5.   (original)   A method in accordance with Claim 4 further comprising connecting a second side of the capacitor to an end of the coil opposite the first inductor and second inductor.

6.   (original)   A method in accordance with Claim 5 further comprising connecting a second capacitor between the first inductor and second inductor and the end of the coil opposite the first inductor and second inductor.

7.   (currently amended)   A method in accordance with Claim 1[3] further comprising:

connecting a first inductor to the coil such that the switched amplified current is received from the first inductor, wherein the first inductor has an inductance Lp; and

connecting a second inductor to the coil such that the second current is received from the second inductor, wherein the second inductor has an inductance Laux, wherein Laux/Lp = (n-1)/n2, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer.

8.   (original)   A method in accordance with Claim 6 further comprising:

connecting a first inductor to the coil such that the switched amplified current is received from the first inductor, wherein the first inductor has an inductance Lp; and

connecting a second inductor to the coil such that the second current is received from the second inductor, wherein the second inductor has an inductance Laux, wherein

$$\frac{\omega^2 \cdot C_{aux} \cdot L_{aux} - 1}{\omega^2 \cdot C_{aux} \cdot L_p} = \frac{n-1}{n^2}$$

, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer, Caux is a capacitance of the capacitor connected to the second end of the secondary side, and ω is an angular frequency.

9.   (currently amended)   A gradient coil system comprising:

at least one gradient coil comprising a first end and a second end;

a first inductor connected to said first end and providing a switched amplified current to said gradient coil; and

a second inductor connected to said first end and providing a second current to said gradient coil, the second current substantially out of phase with the switched amplified current such that said gradient coil receives current with substantially no switching frequency ripple.; and

a transformer coupling the first inductor with the second inductor.

10.   (cancelled)

11.   (currently amended)   A system in accordance with Claim 9 [10], wherein the second inductor is connected to a first end of a secondary side of the transformer, said system further comprising a capacitor wherein a first side of said capacitor is connected to a second end of the secondary side of the transformer.

12.   (original)   A system in accordance with Claim 11, wherein a second side of the capacitor is connected to said second end of said gradient coil.

13.   (original)   A system in accordance with Claim 12 further comprising a second capacitor connected between said first end of said gradient coil and said second end of said gradient coil.

14.   (currently amended)   A system in accordance with Claim 9 [10], wherein said first inductor has an inductance Lp, said second inductor has an inductance Laux, and wherein Laux/Lp = (n-1)/n2, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer.

15.   (original)   A system in accordance with Claim 13, wherein said first inductor has an inductance Lp, said second inductor has an inductance Laux, and wherein

$$\frac{\omega^2 \cdot C_{aux} \cdot L_{aux} - 1}{\omega^2 \cdot C_{aux} \cdot L_p} = \frac{n-1}{n^2}$$, where n is a number of primary turns of the transformer divided

by a number of secondary turns of said transformer, Caux is a capacitance of said

capacitor connected to said second end of said secondary side, and ω is an angular

frequency.

16.   (currently amended)   A magnetic resonance imaging (MRI) system

comprising:

a main magnet configured to generate a substantially uniform magnetic field;

a radio frequency pulse generator configured to excite the magnetic field;

a gradient coil configured to generate gradients extending in different directions in

the magnetic field, said gradient coil comprising a first end and a second end;

a first inductor connected to said first end and providing a switched amplified

current to said gradient coil; and

a second inductor connected to said first end and providing a second current to

said gradient coil, the second current substantially out of phase with the switched

amplified current such that said gradient coil receives current with substantially no

switching frequency ripple-; and

a transformer coupling the first inductor with the second inductor.

17.   (cancelled)

18.   (currently amended)   A system in accordance with Claim 16[17], wherein

the second inductor is connected to a first end of a secondary side of the transformer, said

system further comprising a capacitor wherein a first side of said capacitor is connected to

a second end of the secondary side of the transformer.

19.   (original)   A system in accordance with Claim 18, wherein a second side of the capacitor is connected to said second end of said gradient coil.

20.   (original)   A system in accordance with Claim 19 further comprising a second capacitor connected between said first end of said gradient coil and said second end of said gradient coil.

21.   (currently amended)   A system in accordance with Claim 16[17] wherein said first inductor has an inductance Lp, said second inductor has an inductance Laux, and wherein Laux/Lp = (n-1)/n2, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer.

22.   (original)   A system in accordance with Claim 20 wherein said first inductor has an inductance Lp, said second inductor has an inductance Laux, and wherein

$$\frac{\omega^2 \cdot C_{aux} \cdot L_{aux} - 1}{\omega^2 \cdot C_{aux} \cdot L_p} = \frac{n-1}{n^2}$$

, where n is a number of primary turns of the transformer divided by a number of secondary turns of said transformer, Caux is a capacitance of said capacitor connected to said second end of said secondary side, and ω is an angular frequency.

23.   (new) A gradient coil system, comprising:

at least one gradient coil comprising a first end and a second end;

a first inductor connected to a first output end of a switched amplifier and to the first end of the gradient coil and to provide a switched amplified current from the switched amplifier to the gradient coil;

a second inductor connected to the first end of the gradient coil to provide a second current to the gradient coil, wherein the second current is substantially out of phase with the switched amplified current; and

a transformer to electrically couple the first inductor with the second inductor, the transformer further comprising:

a primary side and a secondary side, wherein the primary side of the transformer is connected across the first inductor and wherein a first side of a capacitor is connected to a second side of the secondary side of the transformer and the second side of the capacitor is connected to a second output side of the switched amplifier.

24.   (new)   The gradient coil system in accordance with claim 23, wherein the capacitor provides ripple cancellation.